

# **Experimental National Air Quality Forecast System (AQFS)**

## **Capability for Ozone (O<sub>3</sub>)**

### **Product Description Document (PDD) 6/06**

#### **Part I - Mission Connection**

a. Description of Product - The National Weather Service's National Air Quality Forecast System (AQFS) Ozone (O<sub>3</sub>) Forecast Experimental Graphic [display](#) is a web-based presentation of gridded (grib formatted) forecast O<sub>3</sub> guidance originating from the Environmental Modeling Center (EMC) of the National Environmental Prediction (NCEP). The ozone data is displayed at 5 km resolution (based on 12 km model output) for a domain covering the contiguous US (CONUS) for 1-hour and 8-hour averages. Additional information on the AQFS is available [here](#).

Ozone grib files are produced from the WRF CMAQ (Community Multi-scale Air Quality) modeling system that is run twice daily from the 0600 and 1200 Universal Time Coordinate (UTC) cycles. These grib formatted files are posted to an NWS Telecommunications Gateway FTP server and ingested into the National Digital Guidance Database (NDGD). Graphic images created from the grib files are posted to [NWS](#) and [EPA](#) web sites per interagency agreement. These graphic images display forecast time projections out to 48 hours. Additional coverage and pollutants will be added in future years.

b. Purpose – AQFS has been developed in support of a Congressional mandate (H.R. Energy Policy Act of 2002 Senate Amendment) to implement an operational air quality forecast system to benefit public health. DOC/NOAA and EPA formed a partnership to transfer scientific advances in air quality monitoring and forecasting into NCEP's world class modeling realm. AQFS guidance will be used by state and local agency forecasters, as well as the media and private sector meteorologists as input to their AQ forecasts providing higher resolution (computed at 12 km resolution) and greater coverage than the approximately 300 specific locations nationwide provided by [EPA's AIRNow](#) site. The general public health will benefit from improved forecasts and mitigation of harmful impacts. Expanded coverage and additional forecast pollutants such as particulate matter will be produced as the science and NOAA capabilities permit and in accordance with growing user needs.

c. Intended Audience - The NWS graphical AQFS guidance products are intended for use by state and local agency AQ forecasters, as well as the media and private sector meteorologists. The general public who may be adversely impacted by pollutants will also have access to the data via graphical output on multi-agency web sites.

d. Presentation Method - The data are presented as web-based graphic images at 5 km resolution. The AQFS provides ground level ozone (O<sub>3</sub>) for a domain covering the CONUS. In the future, the domain will expand to cover the entire US.

e. Feedback Mechanism - We are always seeking to improve our products based on user feedback. Please submit your comments by completing our brief [survey](#). Comments will be most useful if received by August 31, 2006. For general questions regarding the AQFS Capability, please email: paul.stokols@noaa.gov

## **Part II - Technical Description**

a. Format & Science Basis – A description of the AQFS is provided [here](#).

b. Product Availability – The AQFS O<sub>3</sub> products are run twice daily based on the 0600 and 1200 UTC model cycles and are available at 0900 and 1330 EDT, respectively. Real-time O<sub>3</sub> grib files are available at NWS FTP site ([06](#) and [12](#) UTC) and graphics are posted to the [NWS AQ weather products](#) site.

c. Other Details – An AQ directive is under development.